PATENT COOPERATION TREATY REC'D 07 AUG 2006 From the INTERNATIONAL SEARCHING AUTHORITY To: CHARLES R. NOLD BERKELEY NATIONAL LABORATORY WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY ONE CYCLOTRON ROAD BERKELEY, CA 94720 (PCT Rule 43bis.1) Date of mailing (day/month/year) FOR FURTHER ACTION See paragraph 2 below Applicant's or agent's file reference Priority date (day/month/year) International filing date (day/month/year) IB-2018PCT International application No. 22 March 2004 (22.03.2004) 22 March 2005 (22.03.2005) International Patent Classification (IPC) or both national classification and IPC B32B 5/16(2006.01) IPC: 428/403;427/2.1,128 USPC: Applicant THE REAGENTS OF THE UNIVERSITY OF CALIFORNIA 1. This opinion contains indications relating to the following items: Basis of the opinion Box No. I Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. II Priority Box No. III Lack of unity of invention Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial Box No. IV applicability; citations and explanations supporting such statement Box No. V Certain documents cited Box No. VI Certain defects in the international application Box No. VII Certain observations on the international application Box No. VIII If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an 2. FURTHER ACTION Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPBA, the applicant is invited to submit to the If this opinion is, as provided above, considered to be a written opinion of the IrDA, the appropriate to substitute of mailing IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220. 3. For further details, see notes to Form PCT/ISA/220. Authorized officer Date of completion of this opinion Name and mailing address of the ISA/ US Felisa Hiteshew Mail Stop PCT, Attn: ISA/US 30 May 2006 (30.05.2006) Commissioner for Patents Telephone No. (571) 272-P.O. Box 1450 Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201
Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09333

INTERNATIONAL SEARCHING AUTHOR	RITY PC1/US05/09333
ox No. I Basis of this opinion	
With regard to the language, this opinion has been establishe	ed on the basis of:
- templation of the international application into	_, which is the language of a translation furnished for the purposes of
international search (Rules 12.3(a) and 23.1(b)).	and necessary to the claimed
With regard to any nucleotide and/or amino acid sequence invention, this opinion has been established on the basis of:	e disclosed in the international application and necessary to the claimed
a. type of material	
a sequence listing	·
table(s) related to the sequence listing	
b. format of material	·
on paper	
in electronic form	
III otomornia	
c. time of filing/furnishing	•
contained in the international application as	filed.
filed together with the international applicat	tion in electronic form.
furnished subsequently to this Authority for	the purposes of search.
3. In addition, in the case that more than one version or furnished, the required statements that the inf application as filed or does not go beyond the app	n or copy of a sequence listing and/or table(s) relating thereto has been filed formation in the subsequent or additional copies is identical to that in the plication as filed, as appropriate, were furnished.
4. Additional comments:	

WRITTEN OPINION OF THE

International application No. PCT/US05/09333

Statement						YES
Novelty (N)	Claims	1-31				NO
Novelty (11)	Claims	NONE				
•	Claims	1-31				YES
Inventive step (IS)	Claims	NONE				ио
						_YES
Industrial applicability (IA)	Claims	1-31				NO
•	Claims	NONE				
Citations and explanations: laims 1-31 meet the criteria set out in PCT Articles	le 33(2)-(3), beca	ause the prior	art does not tead	h or fairly sug	gest a nanore: wherein said	actor, nanoreactor
Citations and explanations. laims 1-31 meet the criteria set out in PCT Article of the properties of	of at least 0.5nm	n, said nanore article dispos	actor shell envel ed within the spa	ace.		
nell is not perfectly single crystalline, further con	nprising a narrop					
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Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/09333

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OX 140. I	Basis of this opinion		
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With rega	rd to the language, this opinion h	as been established on the basis of:	Ì
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a!	ranslation of the international app	olication into, which is the language of a final state of the st	ned
	ard to any nucleotide and/or ami n, this opinion has been establishe	ing acid sequence disclosed in the international application and necessary to the	
	ype of material		
	a sequence listing	•	
. [table(s) related to the sequen	nce listing	
b. :	format of material		
!	on paper		
	in electronic form		
c.	time of filing/furnishing	•	
•	contained in the internation	nal application as filed.	
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		this Authority for the purposes of search.	
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3.	In addition, in the case that more or furnished, the required state application as filed or does not	this Authority for the purposes of search. The than one version or copy of a sequence listing and/or table(s) relating thereto has bee sments that the information in the subsequent or additional copies is identical to that go beyond the application as filed, as appropriate, were furnished.	n filed in the
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Form PCT/ISA/237(Box No. I) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US05/09333

Novelty (N) Claims 1-31 YES No Claims NONE Industrial applicability (IA) Claims 1-31 YES Claims NONE Industrial applicability (IA) Claims NONE Claims NONE Claims NONE Claims NONE Claims NONE Claims 1-31 Monet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a nanoreactor, elementary a thickness of at least 0.5mm, said nanoreactor shell enveloping a space, wherein said nanoreactor shell is not perfectly single crystalline, further comprising a nanoparticle disposed within the space.	ox No. V Reasoned statement under Rule 4 applicability; citations and explan Statement					vee
Inventive step (IS) Claims 1-31 YES Claims NONE Industrial applicability (IA) Claims NONE Industrial applicability (IA) Claims NONE Claims NONE Claims NONE Citations and explanations: Claims 1-31 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a nanoreactor, comprising a nanoreactor shell having a thickness of at least 0.5mm, said nanoreactor shell enveloping a space, wherein said nanoreactor hell is not perfectly single crystalline, further comprising a nanoparticle disposed within the space.		Claims 1-31				
Industrial applicability (IA) Claims 1-31 1-31 YES NONE NO Citations and explanations: Claims 1-31 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a nanoreactor, omprising a nanoreactor shell having a thickness of at least 0.5mm, said nanoreactor shell enveloping a space, wherein said nanoreactor shell is not perfectly single crystalline, further comprising a nanoparticle disposed within the space.	Novelty (IN)	Claims NONE	<u>}</u>			
Industrial applicability (IA) Claims Claims I-31 Claims NONE NO NO Claims NONE NO NO Claims NONE NO NO Claims NONE NO NO NO NO NO NO NO NO		1 21	~			
Citations and explanations: Citations and explanations: None	Inventive step (IS)	Claims 1-31	E			NO
Citations and explanations: Claims 1-31 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a nanoreactor, emprising a nanoreactor shell having a thickness of at least 0.5mm, said nanoreactor shell enveloping a space, wherein said nanoreactor hell is not perfectly single crystalline, further comprising a nanoparticle disposed within the space. An analysis of the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor, and the prior art does not teach or fairly suggest a nanoreactor and teach or fairly suggest and tea						VES
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omprising a nanotucity single crystalline, further comprising a nanopuritie disposes.	Industrial applications (2-5)	Claims NON	<u>E</u>	,		
omprising a handward single crystalline, further comprising a nanopuritie disposes.	Citations and explanations:	33(2)-(3), because th	e prior art does no	t teach or fairl	y suggest a nano pace, wherein sa	reactor, id nanoreactor
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